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# *A Note on the Factors of Composition of a Group.*

By Ellery W. Davis.

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Let there be a substitution group $A$, from which proceed the two series of maximal invariant subgroups $b, c, d$, 1 and $\beta, \gamma, \delta, \varepsilon, \ldots.$

Denote the group common to $b$ and $\beta$ by $b\beta$, and similarly the group common to any other pair. The triangular arrangement below then shows the

$$\begin{array}{c} A \\ b \qquad \beta \\ c \qquad b\beta \qquad \gamma \\ d \qquad c\beta \qquad b\gamma \qquad \delta \\ 1 \qquad d\beta \qquad c\gamma \qquad b\delta \qquad \varepsilon \end{array}$$

utmost choice of series from $A$, each group in any horizontal line being a maximal invariant subgroup of each of the nearest two in the line immediately above it. Of course

$$1 = d\beta = c\gamma = b\delta = \varepsilon.$$

Again, represent the places of the groups by stars, and let the factors of

$$\begin{array}{c} * \\ p \quad s \\ * \qquad * \\ q \quad s \quad p \quad r \\ * \qquad * \qquad * \\ r \quad s \quad q \quad r \quad p \quad q \\ * \qquad * \qquad * \qquad * \\ s \quad s \quad r \quad r \quad q \quad q \quad p \quad p \\ * \qquad * \qquad * \qquad * \qquad * \end{array}$$

composition for the series $A, b, c, d$, 1 be $p, q, r, s$. Then, for the 24 series from $A$, the factors will be as given in the scheme.

Obviously the representation can be extended to series containing any number of groups.